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ACADEMY HONORS 18 FOR MAJOR CONTRIBUTIONS TO SCIENCE

WASHINGTON -- The National Academy of Sciences (NAS) will honor 18 individuals with awards recognizing extraordinary scientific achievements in the areas of astronomy, biology, medicine, chemistry, geology, oceanography, physics, and psychology. These outstanding scientists have made fundamental contributions to human knowledge, including a near-infrared survey of the entire sky, the discovery of the first statin for lowering cholesterol, and insights into how the human visual system learns to recognize objects.

The awards and recipients for 2007 are:

ALEXANDER AGASSIZ MEDAL – a medal and a prize of \$15,000 awarded every three years for original contributions in the science of oceanography – goes to JAMES R. LEDWELL, senior scientist, department of applied ocean physics and engineering, Woods Hole Oceanographic Institution, Woods Hole, Mass., "for innovative and insightful tracer experiments using sulfur hexafluoride to understand vertical diffusivity and turbulent mixing in the open ocean." The medal was established by a gift of Sir John Murray and has been awarded since 1913.

JOHN J. CARTY AWARD FOR THE ADVANCEMENT OF SCIENCE – a medal and a prize of \$25,000 awarded annually for noteworthy and distinguished accomplishment in any field of science (plant science in 2007) – goes to JOSEPH R. ECKER, professor, plant biology laboratory and genomic analysis laboratory, Salk Institute for Biological Studies, La Jolla, Calif., "for contributions in the areas of ethylene signal transduction and ARABIDOPSIS genomics that have paved the way for a revolution in modern agriculture." The award was established by the American Telephone & Telegraph Co. in honor of John J. Carty and has been awarded since 1932.

ALEXANDER HOLLAENDER AWARD IN BIOPHYSICS – a prize of \$20,000 awarded every three years for outstanding contributions in the field of biophysics – goes to BARRY H. HONIG, investigator, Howard Hughes Medical Institute, and director, center for computational biology and bioinformatics, Columbia University, New York City, "for pioneering theoretical and computational studies of electrostatic interactions in biological macromolecules and of the energetics of protein folding." The award was established by the bequest of Henrietta W. Hollaender in honor of her husband, Alexander W. Hollaender, and has been presented since 1998.

JESSIE STEVENSON KOVALENKO MEDAL – a medal and a prize of \$25,000 awarded every three years for important contributions to the medical sciences – goes to JEFFREY M. FRIEDMAN, investigator, Howard Hughes Medical Institute, and Marilyn M. Simpson Professor, laboratory of molecular genetics, Rockefeller University, New York City, "for the discovery of leptin and its role in the regulation of appetite, energy expenditure, and the molecular mechanisms underlying obesity." The award was established by a gift of Michael S. Kovalenko in memory of his wife, Jessie Stevenson Kovalenko, and has been presented since 1952.

RICHARD LOUNSBERY AWARD – a medal and a prize of \$50,000 awarded to French and American

scientists in alternate years for extraordinary scientific achievement in biology and medicine – goes to XIAODONG WANG, investigator, Howard Hughes Medical Institute, and George L. MacGregor Distinguished Chair in Biomedical Science, department of biochemistry, University of Texas Southwestern Medical Center, Dallas, "for pioneering biochemical studies on apoptosis, which have elucidated a molecular pathway leading into and out of the mitochondrion and to the nucleus." The award was established by Vera Lounsbery in memory of her husband and has been presented since 1979.

NAS AWARD IN CHEMICAL SCIENCES – a medal and prize of \$15,000 awarded annually for innovative research in the chemical sciences that, in the broadest sense, contributes to the better understanding of the natural sciences and to the benefit of humanity – goes to ROBERT G. BERGMAN, Gerald E.K. Branch Distinguished Professor, department of chemistry, University of California, Berkeley, "for numerous innovative contributions at the interfaces of physical, organic, and inorganic chemistry, including the discoveries of alkane carbon-hydrogen bond oxidative addition and 1,4-benzene diradicals." The award, supported by the Merck Company Foundation, has been presented since 1979.

NAS AWARD FOR CHEMISTRY IN SERVICE TO SOCIETY – a prize of \$20,000 awarded biennially for contributions to chemistry, either in fundamental science or its application, that clearly satisfy a societal need. The award, given in alternate years to chemists working in industry and to those in academia, government, and nonprofit organizations (presented to a chemist working in industry in 2007) – goes to ARTHUR A. PATCHETT, retired vice president, medicinal chemistry, Merck Research Laboratories, Rahway, N.J., "for innovative contributions in discoveries of Mevacor, the first statin that lowers cholesterol levels, and of Vasotec and Prinivil for treating hypertension and congestive heart failure." The award, established by E.I. du Pont de Nemours & Co., has been presented since 1991.

NAS AWARD FOR INITIATIVES IN RESEARCH – a prize of \$15,000 awarded annually to recognize innovative young scientists and to encourage research likely to lead toward new capabilities for human benefit (the 2007 field is optical science) – goes to SHANHUI FAN, assistant professor, department of electrical engineering, Stanford University, Stanford, Calif., "for innovative research on the theory and applications of photonic crystal devices." The award, presented since 1981, was established by AT&T Bell Laboratories in honor of William O. Baker, and is supported by Alcatel-Lucent.

NAS AWARD IN MOLECULAR BIOLOGY – a medal and a prize of \$25,000 awarded annually for a recent notable discovery in molecular biology by a young scientist – goes to GREGORY J. HANNON, investigator, Howard Hughes Medical Institute, and professor, Watson School, Cold Spring Harbor Laboratories, Cold Spring Harbor, N.Y., "for elucidation of the enzymatic engine for RNA interference." The award is supported by Pfizer Inc and has been presented since 1962.

NAS AWARD IN THE NEUROSCIENCES – a prize of \$25,000 awarded every three years for extraordinary contributions to progress in the fields of neuroscience – goes to JEAN-PIERRE CHANGEUX, emeritus professor, Institut Pasteur and Collège de France, Paris, "for the pioneering discovery that fast-acting neurotransmitters mediate their effects through allosteric regulation of the neurotransmitter protein." The award was established by the Fidia Research Foundation and has been presented since 1988.

NAS AWARD FOR SCIENTIFIC REVIEWING – a prize of \$10,000 awarded annually for excellence in scientific reviewing within the past 10 years (the 2007 field is astronomy) – goes to GEOFFREY R. BURBIDGE, professor, department of physics, University of California, San Diego, "for contributions as editor of THE ANNUAL REVIEW OF ASTRONOMY from 1974 to 2004, using his vast knowledge to make it the premier astronomy review journal worldwide." The award is supported by Annual Reviews Inc., the Institute for Scientific Information, and THE SCIENTIST in honor of J. Murray Luck and has been presented since 1979.

TROLAND RESEARCH AWARDS – a research award of \$50,000 given annually to each of two recipients to recognize unusual achievement and to further their research within the broad spectrum of experimental psychology – goes to **RANDY L. BUCKNER**, investigator, Howard Hughes Medical Institute, and professor, FAS Department of Psychology and center for brain science, Harvard University, Cambridge, Mass., and to **PAWAN SINHA**, associate professor of computational neuroscience, department of brain and cognitive science, Massachusetts Institute of Technology, Cambridge. Buckner was chosen "for substantive contributions to understandings of the neural mechanisms of memory formation and retrieval." Sinha was chosen "for elucidating how humans learn to recognize visual objects, and for developing computational models of the mechanisms that mediate this learning." The Troland Research Awards were established by a bequest from Leonard T. Troland and have been presented since 1984.

SELMAN A. WAKSMAN AWARD IN MICROBIOLOGY – a prize of \$5,000 given biennially to recognize excellence in the field of microbiology – goes to **RICHARD M. LOSICK**, professor, biological laboratories, Harvard University, Cambridge, Mass., for "discovering alternative bacterial sigma factors and his fundamental contributions to understanding the mechanism of bacterial sporulation." The award was established by a gift of the Foundation for Microbiology and has been presented since 1968.

CHARLES DOOLITTLE WALCOTT MEDAL – a medal and a prize of \$10,000 given every five years to encourage and reward individual achievement in advancing our knowledge of Cambrian or Precambrian life and its history in any part of the world – goes to **JOHN P. GROTZINGER** Fletcher Jones Professor of Geology, department of geological and planetary sciences, California Institute of Technology, Pasadena, "for the insightful elucidation of ancient carbonates and the stromatolites they contain, and for meticulous field research that has established the timing of early animal evolution." The award was established by a gift of Mrs. Mary Vaux Walcott in memory of her husband and has been presented since 1934.

JAMES CRAIG WATSON MEDAL – a medal and a prize of \$25,000 plus \$25,000 to support the recipient's research, given every three years for contributions to the science of astronomy – goes to **MICHAEL F. SKRUTSKIE**, professor, department of astronomy, University of Virginia, Charlottesville, and **ROC M. CUTRI**, deputy executive director, infrared processing and analysis center, California Institute of Technology, Pasadena, "for their monumental work in developing and completing the Two Micron All-Sky Survey, thus enabling a thrilling variety of explorations in astronomy and astrophysics." The award was established by the will of James C. Watson and has been presented since 1887.

Also to be honored at the April 29 ceremony is **MAXINE F. SINGER**, president emeritus, Carnegie Institution of Washington, who was chosen to receive the Academy's **PUBLIC WELFARE MEDAL**. The Academy selected Singer "for providing inspired and effective leadership in matters of science and its relationship to education and public policy." The medal was established to recognize distinguished contributions in the application of science to the public welfare and has been presented since 1914.

The National Academy of Sciences is a private, nonprofit honorific society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare. Since 1863, the National Academy of Sciences has served to "investigate, examine, experiment, and report upon any subject of science or art" whenever called upon to do so by any department of the government.

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